MAUI 12-9-93

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND WASTE MANAGEMENT
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

December 3, 1993

Ms. Doris Betuel
United States Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105-3901

Attn: Ms. Shannon Fitzgerald

Dear Ms. Betuel:

SUBJECT: EPA UNDERGROUND INJECTION CONTROL PERMIT APPLICATION

BACKGROUND INFORMATION

The purpose of this application is to request additional injection well capacity at the Lahaina Wastewater Reclamation Facility in Maui, Hawaii. The present plant processing design capacity is at 6.7 mgd average dry weather flow (ADWF) and 14.6 mgd peak wet weather flow (PWWF). The plant is presently undergoing a much needed expansion which will increase the design capacity to 9.0 mgd ADWF and 19.8 mgd PWWF. Our existing permit with the Department of Health requires a 100% backup capacity of the plants peak flow. The design peak dry weather flow (PDWF) is 13.5 mgd. A 100 % backup for this flow rate would be a total well capacity of 27 mgd.

In the enclosed application we are requesting the proper required capacity to meet both the DOH and the EPA requirements. Rather than apply for a specific number of wells, we are applying for a required capacity. It would be difficult to speculate the number of wells that this will require given the differing rates of flow that individual wells can accommodate.

The maximum sustainable injection rates for our existing wells after well cleaning is 13.4 mgd., according to the enclosed Brown and Caldwell study dated January 21, 1993, (previously provided to your office). Prior to well cleaning, the capacity has been measured at between 4.5 to 9.0 mgd.. These rates do not meet our existing permit requirements. As stated to the Department of Health on many occasions, this presents a very serious situation.

In December 1991, and January of 1992 (during peak flow season) the Lahaina facility experienced flows to the plant on the order of 9 to 10 mgd. These figures show an immediate need for additional capacity as flows can, and will increase to these levels again during this holiday season heightening the potential for well overflow.

To fully realize the crucial need for additional capacity, one must look at the percent capacity that each well provides, compared to the total capacity of all the wells. At the present time well #2 provides nearly 70% of the total capacity. If well #2 should become plugged or fail in any way, the remaining wells could not handle even the existing average dry weather flow. Please refer to page #3 of the Brown and Caldwell Study labeled attachment "A".

As part of the present expansion, transmission lines and "capped tee's" are being put into place to accommodate the connection of the proposed future wells. The actual drilling of the wells was in the original construction contract, but a negative change order was generated when our UIC permit was rescinded. A photo copy of the present work being completed on the transmission lines is enclosed under attachment "V".

PAST PERMIT APPLICATION CORRESPONDENCE

A request for six (6) to twelve (12) additional wells was filed with the Department of Health in September 20, 1991. Approval for the construction of these wells was granted October 3, 1991. Approval was rescinded on May 15, 1992, due to the possible relationship between the injected effluent and the proliferation of the alga cladophora.

On February 4, 1993 a second request for additional well capacity was filed for by the County of Maui. The Department of Health is supportive of the construction of new wells (in a letter dated April 13, 1993), although the EPA would also have to approve such an action. Since that time there has been no response from the Department of Health on this issue, except that they have been waiting for EPA guidance.

EPA has informed the County of Maui that we will soon be required to file for an additional UIC permit (beyond that of the existing DOH UIC permit), directly through the EPA for each Maui County Facility. EPA has also stated that an application should be filed for any additional wells required at the Lahaina facility. Enclosed is said application, information, and supporting attachments.

Ms. Betuel, we look forward to your expeditious review of this application. Should you have any questions concerning this application or attachments, please feel free to call Mr. Michael Ratte at (808) 243-7417.

Sincerely,

George N. Kaya, Director
Department of Public Works
County Of Maui, Hawaii

MR(93423.uic)
Enclosures

c: Thomas Arizumi, DOH
Mayor Linda Crockett Lingle

Form 4 UIC

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

UNDERGROUND INJECTION CONTROL PERMIT APPLICATION

(Collected under the authority of the Safe Drinking Water Act, Sections 1421, 1422, 40 CFR 144)

Form Approved. OMB No. 2040-0042. Expires 3-31-95

I. EPA ID NUMBER

		T/A	C
U			

READ ATTACHED INSTRUCTIONS BEFORE STARTING

FOR OFFICIAL USE ONLY

Application approved mo	day	year	Date Received mo	day	year	Permit/Well Number	Comments

II. FACILITY NAME AND ADDRESS

Facility Name
Lahaina Wastewater Reclamation Facility

Street Address
3300 Honoapiilani Highway

City Lahaina | **State** HI | **ZIP Code** 96761

III. OWNER/OPERATOR AND ADDRESS

Owner/Operator Name
Maui County, Dept. of Public Works

Street Address
200 S. High Street

City Wailuku | **State** HI | **ZIP Code** 96793

IV. OWNERSHIP STATUS (Mark 'x')

☐ A. Federal ☐ B. State ☐ C. Private

☐ D. Public ☒ E. Other (Explain) County ownership

V. SIC CODES

VI. WELL STATUS (Mark 'x')

☐ A. Operating | Date Started mo / day / year | ☐ B. Modification/Conversion | ☒ C. Proposed

VII. TYPE OF PERMIT REQUESTED (Mark 'x' and specify if required)

☒ A. Individual ☐ B. Area

Number of Existing wells	Number of Proposed wells	Name(s) of field(s) or project(s)
4	*See enclosed	Lahaina Wastewater Reclamation Facility Expn.

VIII. CLASS AND TYPE OF WELL (see reverse)

A. Class(es) (enter code(s))	B. Type(s) (enter code(s))	C. If class is "other" or type is code 'x,' explain	D. Number of wells per type (if area permit)
1	M		

IX. LOCATION OF WELL(S) OR APPROXIMATE CENTER OF FIELD OR PROJECT

C	A. Latitude Deg	Min	Sec	B. Longitude Deg	Min	Sec	Township and Range Twsp	Range	Sec	¼ Sec	Feet from	Line	Feet from	Line
I	20	56	55	156	41	25								

X. INDIAN LANDS (Mark 'x')

☐ Yes ☒ No

XI. ATTACHMENTS

(Complete the following questions on a separate sheet(s) and number accordingly; see instructions)

FOR CLASSES I, II, III (and other classes) complete and submit on separate sheet(s) Attachments A — U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application:

XII. CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

A. Name and Title (Type or Print)	B. Phone No. (Area Code and No.)
GEORGE N. KAYA, Director of Public Works and Waste Management	(808) 243-7845
C. Signature	**D. Date Signed**
	12/6/93

EPA Form 7520-6 (2-84)

SPECIFIC PERMIT INFORMATION AND ATTACHMENTS TO FORM #4

SECTION VII

The number of proposed wells is not the specific concern of the County of Maui. The recommended course of action would be to provide appropriate capacity to meet the existing DOH requirements for our existing UIC permit as well as to meet any new EPA permit requirements. This could be done on a well by well basis until the appropriate capacity has been reached. Well capacity testing would be completed upon completion of each well construction. In the enclosed drawing G5 (in the construction plans), the order in which we would like to proceed with well drilling is numbered and shown, starting with the proposed well #5.

During the next few months, Brown and Caldwell Consultants will be completing a status report on all of the County of Maui injection wells in compliance with the Department of Health requirements. During this study, well testing will be performed to find the present well capacities. After completed, this data should be used to determine the requirements for well capacity.

ATTACHMENTS TO FORM #4

A. Area of review methods
The area of review shall be a fixed radius of 1/2 mile from the well bore.

B. Topographical maps with well information required
See Maps and sections labeled attachments "B" and "C"

C. Well Data
See attachments "B" and "C"

D. Maps and cross sections of USDW'S
See attachments "B" and "C"

F. Maps and cross sections of geologic structure of area.
See attachment "F", on pages #8 - #13 in the Report on the Water Resources of the Lahaina District.

H. Operating Data

1) Average and Maximum daily rate of water to be injected will depend on the capacity and number of wells drilled. The total amount of capacity needed will depend on both DOH and EPA requirements. The DOH in Hawaii requires a 100 % backup capacity for peak flow. The design peak dry weather flow (PDWF) is 13.5 mgd. A 100 % backup for this flow rate would be a total well capacity of 27 mgd.

2) The average and maximum injection pressures will remain similar to the existing wells. The injection of water will be by gravity feed only, as are all Maui County Injection Wells. The actual pressure will be a function of the distance from the water level in the well to the ground elevation.

3) The nature of annulus fluid surrounding the wells at the bottom of the well casing is of brackish quality with very high chloride levels. Refer to pages 16 - 19 in the USGS Report On The Water Resources Of the Lahaina District.

H. Operating Data (cont.)

✓ 4) The source and analysis of the injected water characteristics:

The source of the injected water will be from the chlorine contact chamber at the Lahaina Wastewater Reclamation Facility. The water is presently classified as R2 water by the DOH standards.

The chemical analysis of the effluent water will be the same or of better quality as is presently being injected at the present time.

* The PH levels range from 6.6 to 7.2 S.U.
* The temperature ranges from 25 to 32 degrees C

For a detailed look at the more specific characteristics of the injected water, refer to attachments "H4". These attachments are from recent laboratory reports completed as part of our present UIC permit requirements with the Department of Health in Hawaii. These reports includes analysis of BOD, residual chlorine, corrosiveness, reactivity, organics, inorganics, as well as volatile organics of the injected water.

K. Injection Procedures
Refer to sheets #9 - #17 in the contract documents dated May 1992, Volume 5 of 5. (15-17)

L. Construction Procedures
Refer to sheets #9 - #17 in the contract documents dated May 1992, Volume 5 of 5. (15-17)

M. Construction Details
Refer to sheets #G111 through G113, as well as S1 and S2 in the contract documents dated May 1992, Volume 5 of 5.

N. Changes in Injected Fluid
Following the completion of the present expansion, (including the sand filter and the ultraviolet disinfection system), approximately three (3) MGD of the effluent water will be meeting R-1 quality water standards after the present expansion. This water will be targeted for reuse projects.

* Data from independent lab analysis from samples taken at Lahaina Facility.

O. Plans for well failures

There is an automatic bypass system set up to allow the effluent water to bypass the plugged well(s) and flow to other existing wells. See sheet G106 in Volume 5 of the contract documents showing the final effluent and overflow mains in a cross sectional format.

P. Monitoring Program

Refer to our existing UIC permit monitoring requirements explained inside of the enclosed Department of Health, Lahaina UIC Permit. (page #4 - 17, in attachment "P").

U. Description Of Business

The water to be injected into the proposed injection wells is originating from a wastewater reclamation facility located in Lahaina Maui, Hawaii. A plant schematic is enclosed to illustrate the different processes in which the water is treated, filtered, and disinfected. This map also shows the location of the existing wells as well as the location of the proposed future wells. Refer to attachment "U", as well as page G5 in the construction documents for the Lahaina Wastewater Reclamation Facility.